

AIR WAR COLLEGE

AIR UNIVERSITY

FROM DARKNESS TO LIGHT:

POSTTRAUMATIC GROWTH AMONG RECENTLY DEPLOYED

ARMY NATIONAL GUARD SOLDIERS

by

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Biography

Lieutenant Colonel Joseph Looney is a U.S. Air Force space and missile operations officer assigned to the Air War College, Air University, Maxwell AFB, AL. He graduated from the Michigan State University in 1991 with a Bachelor of Science in Psychology and Arizona State University in 2004 with a Doctorate in Counseling Psychology. He served in various space and missile operations assignments and as an Associate Professor and Deputy Department Head in the Department of Behavioral Sciences and Leadership at the United States Air Force Academy.



Abstract

Many service members returning from the wars in Iraq and Afghanistan suffer from trauma-related behavioral health concerns, including posttraumatic stress disorder, depression, anxiety and alcohol misuse. Given the distinctive nature of the Army National Guard, some studies suggest these soldiers might be particularly at-risk. While some experiencing war-related trauma report negative symptoms, others report growth in close relationships, personal strength and a renewed sense of life appreciation. This study examined the situational factors related to posttraumatic growth within a group of recently deployed Army National Guard Soldiers. Results indicated the positive-benefits of deployment, transactional leadership and social-support best predicted post-deployment growth. Leadership recommendations are provided to promote posttraumatic growth in deployment and post-deployment environments.

Introduction

Military members returning from combat operations in Afghanistan and Iraq report various behavioral health concerns, including mood disorders, Post-Traumatic Stress Disorder (PTSD), alcohol problems and impaired driving. Many of these concerns are directly related to, or exacerbated by, combat trauma. In 2004, Hoge et al. examined over 6,000 infantry soldier following a combat deployment. Between 15-17% of soldiers qualified for a diagnosis of generalized anxiety, depression, or PTSD. Not surprisingly, there was a strong relationship between combat experiences and the existence of PTSD.¹ In a 2006 study, Hoge et al. noted 19% of soldiers who previously served in Iraq reported a behavioral health concern. Additionally, within the year following their deployment, 35% of soldiers sought mental health treatment. In the 2006 study, the reported mental health concerns directly linked with combat exposure.² The relationship between combat trauma and other mental health problems also extends to substance misuse and impaired driving. As for substance misuse, Wilk et al. studied a sample of 1120 infantry soldiers returning from deployment to Iraq. Post-deployment, 25% of the group reported indications of alcohol misuse. Higher rates of exposure to the threat of death/injury corresponded to increased alcohol misuse.³ Concerning impaired driving, Lew et al. found 93% of combat veterans reported more difficulties driving post-deployment. The most common areas of driving difficulty included problems with anger or impatience, general driving problems and experiences with near misses. Soldiers diagnosed with PTSD exhibited the most significant driving impairments.⁴ Taken together, these results demonstrate the connection between war-related trauma and a host of negative behavioral outcomes.

Due to their unique make-up, members of the U.S. military reserve components are potentially more vulnerable to mental health concerns following combat deployments. In a study

of troops returning from a wartime deployment, Milliken et al. found 42% of reserve and 20% of active troops required behavioral health treatment.⁵ In a study conducted by Polusny et al., 13.8% of U.S. Army National Guard (ARNG) soldiers deployed to Iraq reported post-deployment PTSD. After accounting for pre-deployment factors, exposure to combat best predicted PTSD.⁶ Also studying ARNG soldiers post-deployment, Renshaw et al. investigated the links between combat and psychological functioning. The results indicated current ARNG soldiers reported more combat trauma, and subsequent PTSD symptoms, than did ARNG veterans of past military operations. In this study, 18% of soldiers met criteria for PTSD, while 37% positively screened for depression. Additionally, greater amounts of combat trauma related to higher degrees of PTSD and depression.⁷ Similar to the larger military population, combat trauma appears linked with substance misuse in the reserve component. Ouimette et al. found combat-exposed ARNG participants reported high levels of PTSD symptoms (68% reported re-experiencing events and 93% indicated hyperarousal symptoms). Also in this study, the more PTSD, the greater misuse of alcohol and drugs.⁸ The link between combat trauma and negative behavioral health concerns is prevalent in ARNG populations and this connection seems more pronounced with this potentially at-risk group.

Despite these numerous combat-trauma related mental health concerns, many soldiers return home from deployment without significant difficulties, while some even report post-deployment growth. There are few studies exploring the factors associated with Posttraumatic Growth (PTG) among military populations. The U.S. Army Research and Materiel Command awarded a grant to this study to explore the factors contributing to PTG among recently deployed ARNG soldiers. Rather than focus on internal personality traits of individual soldiers, the present study examined external or environmental factors influencing PTG that leaders have the

opportunity to influence. Such factors included barriers to support and a range of deployment related stressors (inconvenience, home front worries, danger, unit issues, homecoming concerns, etc.). Additionally, the study explored the relationship between PTG and a number of support factors potentially influenced by leaders, namely the impact of positive deployment benefits, effective leadership and robust social support systems. This paper predicts a range of deployment related stressors/barriers to support will negatively relate to PTG, while the presence of support factors will positively relate to PTG. Consequently, leaders can reduce deployment stressors and barriers, while bolstering deployment benefits, to enhance post-deployment PTG.

U.S. Army National Guard

The ARNG serves a unique role in the nation's defense and this role is changing and evolving. The ARNG is one of the various organizations comprising the U.S. military reserve force. While the ARNG acts as a reserve unit for the federal government, the ARNG also serves a state mission and aligns with the state government.⁹ Consequently, ARNGs member hold dual membership in both the state militia and the U.S. Army.¹⁰ When under state control, the governor commands the ARNG and may activate units to address natural disasters and homeland defense missions.¹¹ The ARNG federal mission is to "maintain well-trained, well-equipped units available for prompt mobilization during war and provide assistance during national emergencies (such as natural disasters or civil disturbances)."¹² Traditionally, ARNG soldiers rarely deployed, but the recent wars in Iraq and Afghanistan changed this dynamic. In excess of 60,000 ARNG soldiers deployed to Operation Desert Shield and Desert Storm.¹³ From 2001-2007, over 250,000 National Guard members deployed to Iraq and Afghanistan in support of combat operations.¹⁴

The recent increase in deployments, along with the unique nature of ARNG service, pose potential challenges for Guardsmen and their leadership. Most soldiers serve part-time in the ARNG and typically hold full-time employment outside the service. Griffith suggests the part-time nature of the ARNG, coupled with the recent increase in deployments, laid the groundwork for significant role conflict. Although laws exist to protect civilian employment in case of activation, deployments likely disrupt full-time employment and postsecondary education.¹⁵ These disruptions might lead to financial hardships and conflict within a family. Deployments also can lead to family separations and disruptions in the family pattern, leading to role conflict and interpersonal distress.¹⁶ Savitsky et al. outlines a number of stressors by deployment phase impacting reserve forces. During the pre-deployment phase, preparation training might conflict with family expectations of spending time together and civilian work schedules.¹⁷ During deployments, while soldiers worry about their families back home, spouses take on increased responsibilities.¹⁸ Post-deployment, soldiers' reintegration into the family and the civilian community potentially creates stress and conflict.¹⁹ Savitsky et al. notes ARNG are particularly vulnerable during reintegration. These soldiers may not be able to spend time in their units following deployment and may be geographically separated from reintegration resources.²⁰ Additionally, because they integrate back into the civilian community, they may lack the unit social support network fostered during the deployment, in contrast to many active duty units.²¹ These potential challenges may influence a soldier's ability to cope with combat trauma and it is incumbent upon ARNG leadership to address these hindrances to PTG.

Post-Traumatic Growth

Despite the potentially damaging effects of various forms of trauma, many victims of traumatic experiences report growth following these events. According to Tedeschi and

Calhoun, PTG involves “the extent to which survivors of traumatic events perceive personal benefits, including changes in perceptions of self, relationships with others, and philosophy of life, accruing from their attempts to cope with trauma and its aftermath.”²² Specifically, they suggest trauma can lead to growth in relationships with others, valuing new possibilities, enhanced personal strength, spiritual change and appreciation for life.²³ Although many studies examined PTG resulting from cancer, sexual assault and national disasters, a growing number of studies are researching PTG related to military trauma.

Despite the stress and trauma of war, a number of studies confirm the existence of PTG in the midst of these difficulties. Feder et al. examined PTG among 30 former military prisoners during the Vietnam War. These service members reported a moderate degree of PTG and strongly endorsed growth in personal strength and appreciation of life.²⁴ In a study of 61 Gulf War veterans, Maguen et al. found ARNG and Reservists, over and above active duty soldiers, scored higher on the appreciation of life items. Additionally, those who perceived greater exposure to warfare and threat reported more appreciation of life.²⁵ The findings confirm the possibility of persistent personal growth even in the face of life-threatening hardship.

In addition, PTG related to fewer mental health conditions following exposure to combat deployments. In research with over 5,000 combat veterans, Bush et. al. explored the relationship between PTG and suicidal ideation. Holding constant known risk factors for suicide, researchers found the more PTG soldiers reported, the less suicidal ideation they experienced.²⁶ In regards to PTG and negative behavioral health, Gallaway et al. found soldiers espousing recent thoughts of suicide also reported considerably lower levels of PTG.²⁷ Although military members experience trauma in war, research shows some also experience PTG, accompanied by fewer behavior health concerns. Few studies have explored the military environmental or situational

factors leaders may potentially influence to impact PTG, but deployment related stressors and barriers to support likely fall into this category.

Deployment Related Stressors/Barriers

There are a number of unique deployment related stressors potentially influencing PTG, including family and personal worries, unit-related concerns, and threat to life. In a study of deployment worries, Renshaw noted ARNG and Reserve soldiers reported significantly more family and career concerns than active duty troops. These deployment concerns also accounted for post-deployment PTSD.²⁸ According to Renshaw, “Such a difference is consistent with general differences between reserve and active duty troops, in that reserve troops are more likely to be older and have established families, and they also have careers outside the military.”²⁹ For the ARNG soldier, these results suggest heightened family and career worries may pose greater risk for behavioral health concerns. In a study of post-deployment worries, Riviere et al. explored the relationship between job loss, economic hardship, the negative impact of deployment on civilian co-workers and impoverished employer support on PTSD and depression among ARNG soldiers. In their analysis, all these factors significantly related to PTSD and depression. For ARNG soldiers, these findings suggest unique post-deployment material and social concerns influencing their mental health. Unit-concerns, specifically perceived inadequate pre-deployment training, were also linked to behavioral health concerns.³⁰ As noted previously, Polusny et al. found 13.8% of ARNG soldiers deployed to Iraq reported post-deployment PTSD. Reporting feeling inadequately prepared for the deployment, along with more stressors prior to deployment, best predicted PTSD.³¹ In sum, personal and professional stressors may impede ARNG soldiers from realizing significant PTG. Consequently, leaders are in a key position to reduce these deployment related stressors to enhance the potential growth of their soldiers.

Within the military, there exist real and perceived barriers preventing service members from receiving mental health treatment, which may also inhibit PTG. Ouimette et al. examined barriers to care among a large population of veterans diagnosed with PTSD.³² “Stigma related barriers (concerns about social consequences and discomfort with help-seeking) were rated as more salient than institutional factors (not “fitting into” VA care, staff skill and sensitivity, and logistic barriers).”³³ Of all the soldiers who screened positively for a mental disorder in Hoge’s study, only 23% to 40% sought follow-on care. Compared to those without mental health concerns, soldiers with these problems were twice as likely to have reservations about potential barriers to care. Of the soldiers reporting symptoms indicating a mental health disorder, 63% endorsed “My unit leadership might treat me differently” and 65% noted, “I would be seen as weak.”³⁴ These pervasive barriers to support likely hinder ARNG soldier access to proper care and thereby obstructing the PTG process. Again, leaders are in a prime position to remove barriers to support and create the potential for PTG. Despite the many potential stressors and barriers, ARNG soldiers also have numerous prospective factors to enhance PTG.

Deployment Related Support Factors

While deployment stressors and barriers to support exacerbate mental health concerns and hinder PTG, deployment related support factors might have the opposite effect. In a military setting, one such support factor is leadership. According to Avolio and Bass, transformational leaders “motivate others to do more than they originally intended and often even more than they thought possible.”³⁵ The authors suggest transformational leaders inspire confidence and sets high ethical standards, while providing followers motivation and shared meaning.³⁶ These leaders also enhance followers’ innovation and creativity, while providing support, mentoring, and coaching.³⁷ In contrast, Avolio and Bass noted transactional leaders focused less on

inspiration or motivation and more on follower performance. According to the authors, transactional leadership “depends on behavior/performance being linked with recognition or rewards, or with active or passive corrective discipline where performance falls below some acceptable standard.”³⁸ As distinguished from transformational and transactional leadership, laissez-faire leaders provide little to no leadership, leaving followers without direction.³⁹

In a meta-analysis exploring leadership and organizational performance, Lowe et al. examined transformational and transactional leadership across 47 studies. While transactional leadership proved effective, transformational leadership led to the greatest improvement in organizational performance.⁴⁰ In a study on military unit performance, Bass et al. noted both transactional and transformational leadership showed a positive relationship to unit effectiveness.⁴¹ Beyond military performance, effective leadership also buffers against mental health concerns and fosters PTG.

Although no studies exist specifically exploring the relationship between leadership and PTG, a number of authors examined the role of effective leadership on mitigating mental health concerns. In a study of UK forces deployed to Afghanistan, Jones et al. measured the influence of morale, cohesion, and leadership on combat-related PTSD symptoms and mental health concerns. High self-reported levels of unit morale, cohesion, and perceived good leadership proved positively related to lower levels of mental health concerns and PTSD.⁴² Similarly, Wood et al. named leadership and the search for situational benefits as protective factors against PTSD among post-deployed veterans. As followers reported increased levels of leadership and benefit finding, they also endorsed fewer PTSD symptoms.⁴³ Additionally, Du Preez studied UK soldiers post deployment and found perceived interest from leaders connected with fewer PTSD and mental disorder symptoms. Followers feeling well informed positively related to lower

mental health concerns, while feeling able to talk about personal difficulties linked with less alcohol misuse.⁴⁴ Helping soldiers identify situational benefits, while expressing interest in soldiers, appears more aligned with transformational leadership than either transactional or laissez-faire leadership. Consequently, this study hypothesizes both transformational and transactional leadership will positively predict PTG, but more so for transformational leadership, while laissez-faire leadership will negatively predict PTG.

Although military deployments come with many potentially deleterious outcomes, the positive benefits of service may mitigate these difficulties and facilitate the PTG process. In a study exploring the positive benefits of service, Griffith found ARNG soldiers' desire for military experience predicted reenlistment.⁴⁵ Items in this category included: "serve my country, have overseas training and travel opportunities, be physically and mentally challenged, and develop discipline and confidence."⁴⁶ In addition to the desire for military experience, ARNG soldiers in the study noted financial benefits as a reason for reenlistment.⁴⁷ Here, items included bonus pay, additional deployment money, and potential retirement earnings.⁴⁸ By emphasizing the positive benefits of service, leaders may help soldiers find meaning in their deployment, thereby leading to enhanced PTG.

Social support is another key factor enhancing PTG. Prati and Pietrantoni explored the relationship between PTG and social support across 103 studies. The meta-analysis showed social support moderately related to PTG.⁴⁹ This finding holds true for military populations as well. In a study of 61 Gulf War veterans, Maguen et. al. examined a number of factors potentially predicting PTG, including post-deployment social support, unit social support, perceived threat, combat exposure, and pre-deployment stressors support. Of all these factors, only post-deployment social support related significantly to PTG.⁵⁰ As in the larger military

force, the benefit of social support proved key for ARNG soldiers as well. Pietrzak et al. researched PTG with 272 ARNG combat veterans. Unit social support, and post-deployment social support, again predicted PTG.⁵¹ In a study involving combat-related amputation, Benetato examined associations among social support, rumination, and PTG among these veterans. As predicted, PTG showed a small positive relationship with post-deployment social support.⁵² By fostering robust social support networks in the unit, leaders likely provide a safe and supportive environment for PTG to flourish, even in the face of PTSD symptoms.

Post-Traumatic Stress Symptoms

The relationship between PTG and PTSD is complicated at best. Some studies show a negative association between PTG and PTSD, yet others show no relationship, while others demonstrate a positive correlation. To begin, and by way of definition, PTSD involves “the development of characteristic symptoms following exposure to an extreme traumatic stressor.”⁵³ Additional symptoms include a sense of re-experiencing the trauma, avoiding reminders of the trauma, emotional deadening, and physiological arousal.⁵⁴ Dekel et al. outlined three possible relationships between PTG and PTSD extant in the literature. First, PTG and PTSD negatively related to each other or as PTSD symptoms increased, growth from the traumatic experience decreased. Dekel suggested this relationship demonstrated PTG and PTSD existed on opposite ends of a spectrum.⁵⁵ For instance, in a study on sexual assault trauma, Frazier et al. discovered more sexual assault trauma related negatively to PTG.⁵⁶ Consequently, PTSD might interfere with the PTG process. Second, Dekel et al. postulated no relationship between trauma-related growth and posttraumatic negative symptoms.⁵⁷ In other words, PTG and PTSD are two separate and unrelated constructs existing independently within an individual and one does not impact the other.

Third, Dekel et al. posited PTG and PTSD are positively related, hence as negative trauma symptoms increased, so did growth from the same trauma.⁵⁸ Similarly, Tedeschi and Calhoun (2004) suggested trauma-related stress provides the impetus, and laid the foundation, for growth.⁵⁹ In a study reporting a positive relationship, Dekel et. al. examined PTSD and PTG among Israeli ex-prisoners of war. In this longitudinal study, initial PTSD positively predicted follow-on PTG. Over the long term, former prisoners with PTSD noted higher PTG levels than those with no initial PTSD.⁶⁰ In support of the positive relationship between PTG and PTSD, Tedeschi and McNally suggested soldiers should “understand how the negative aspects of posttrauma experience, especially shattered beliefs about one’s self, others, and the future, form the foundation for later posttraumatic growth.”⁶¹ For present purposes, this study hypothesizes PTSD symptoms and PTG are positively related, suggesting PTSD symptoms precipitate the PTG process. This implies leaders play a potentially vital role in helping soldiers understand the link between PTSD and PTG, while providing hope that PTSD symptoms may prove an impetus for PTG.

Method and Procedure

The U.S. Army Research and Materiel Command awarded a grant to this study to explore the factors contributing to readjustment and PTG among recently deployed ARNG soldiers. During unit training events following a deployment, ARNG soldiers were invited to participate. Interested subjects completed questionnaire packets on site. Initially, 1522 ARNG soldiers completed the questionnaires. While some did not complete the informed consent, others did not report a deployment to a war zone, so both of these groups were excluded from the study. The final sample of 1140 reported at least one deployment to a combat related zone. The study employed a number of measures to test the various hypotheses.

The Posttraumatic Growth Inventory (PTGI) is the most widely used measure of PTG.⁶²

According to Tedeschi & Calhoun, the measure is rated on a 0 to 5 scale (no change to a great deal of change) and the 21-item instrument seeks to document positive changes related to the trauma experience. As noted previously, factors include relating to others, new possibilities, personal strength, spiritual change and appreciation of life.⁶³ In a sample with over 5,000 active duty soldiers, Lee et al. found the PTGI supported all five of these factors.⁶⁴

The 24-item Scott-McCone Deployment Stressor Scale uses a 5-point Likert scale to examine deployment-related stress. Subscales include inconvenience stressors, general deployment worries, danger-related stress, unit stressors and stress concerning homecoming events. The analysis used average item scores on the overall measure (1 to 5), with higher scores indicating more stress.⁶⁵

The McCone-Scott Irregular Warfare Stressor Scale examines stress related to ambiguous warfare, including the difficulty distinguishing between combatants and non-combatants on the battlefield. This four-item measure uses a 4-point Likert scale, with the average item score used in the analyses.⁶⁶

In order to measure the difficulties accessing treatment post-deployment, the study employed the 5-item McCone-Scott Barriers to Support Scale. Higher values correspond to more difficulty receiving support on this 2-point Likert Scale. As with similar measures, an average item score was used in the results.⁶⁷

The Multifactor Leadership Questionnaire (MLQ5X) examines transformational, transactional and laissez-faire leadership.⁶⁸ This scale is widely used in organizational settings to measure transformational and transactional leader behaviors.⁶⁹ By averaging respondent's

score on individual items (0 to 4), this study used a shortened transformational leadership score.⁷⁰

The 11-item Scott/McCone Positive Benefits of Deployment Scale assesses many benefits derived from deployment. Potential benefits include pride, family closeness, civilian job experience, money, home life appreciation, bonds with unit, better coping with stress, perspective on problems, healthcare/retirement benefits, and feeling like a better soldier. Positive benefits are measured on a 4-point Likert scale, with average item scores used in the analyses.⁷¹

The 11-item Scott/McCone Sources of Support Scale outlines potential social support systems, including informal and formal support system. Informal support systems may include friends and family, while formal support involves groups of support. Items are measured on a 1 to 4 point Likert scale, with average item scores used in the results⁷².

Finally, to examine PTSD symptoms, this study used the PTSD Checklist-Military Version (PCL-M).⁷³ Based on the clinical symptoms for PTSD, the 17-item measure is rated on a 5-point Likert scale.⁷⁴ Regarding validity, the PCL-M highly correlated with a similar scale used with Vietnam and Persian Gulf War veterans.⁷⁵

Results

The correlations among the variables demonstrated a number of significant relationships (see Appendix, Table 1). As expected, many stressors positively correlated with one another. The first exception was irregular warfare, which only positively related to deployment inconvenience, worries and homecoming. The next exception involved laissez-faire leadership, which unexpectedly negatively correlated with deployment inconvenience. Consequently, as a lack of leadership was more prominent, deployment inconveniences diminished. As predicted, a

number of stressors negatively correlated with the supportive variables, while a few did not. In fact, deployment worry and danger, along with irregular warfare stressors and barriers to support, showed no relationship to the support variable. While most stressors showed negative or no relationship to supports, the exception again was deployment inconvenience. Surprisingly, this variable showed a positive relationship with many of the leadership dimensions. Hence, an increase in inspirational leadership corresponded with an increase in reported deployment inconveniences.

As anticipated, all the stressors positively correlated with PTSD, with one important exclusion. Deployment danger negatively related to PTSD, such that as danger increased, PTSD decreased. Remarkably, many of the stressors positively related to PTG. Even though many of these stressors had little connection to trauma, they were still related to higher levels of PTG. Turning to support factors, all positively correlated with one another. Also as suspected, all support factors negatively related to PTSD, while positively correlating to PTG. Consequently, as leadership, positive benefits and social support increased, PTG increased, whereas PTSD symptoms decreased. Finally, PTG and PTSD symptoms exhibited a positive relationship, demonstrating increased PTG related to increased PTSD symptoms.

According to the hypothesis, support variables will positively predict PTG, while stressors/barriers to support and PTSD symptoms will negatively predict PTG. In the regression analysis, and in affirmation of the hypothesis, the supportive variables of positive deployment benefits, transactional leadership and both social support variables (formal and informal) positively predicted PTG. Counter to the hypothesis, both deployment stress (worry) and barriers to support were positively predictive of PTG, while no other stressors or support factors proved significant. Overall, the regression equation was significant, $R^2 = .22$, adjusted $R^2 = .20$,

$F(17, 803) = 13.26, p < .001$ and 20.3% of the variance in PTG scores were explained (see Appendix, Table 2).

Recommendations and Conclusion

The study sought to explore the factors related to PTG for recently deployed ARNG soldiers and a number of interesting findings emerged. First, and unexpectedly, both deployment worries and barriers to support positively predicted PTG. It seems counterintuitive to suggest increased worries while deployed, including concerns about family matters and financial issues, related to PTG for ARNG soldiers. Triplett et al. suggested thinking processes prove an essential task in the PTG process.⁷⁶ The authors argued traumatic events cause a challenge to individual core beliefs, which leads to repeated thinking about the event, or rumination.⁷⁷ According to Triplett et al., “rumination leads to the development of core beliefs that accommodate the stressful experience.”⁷⁸ In other words, traumatic events cause individuals to consider how those events might influence their lives, which may include impacts on family, relationships, etc. Consequently, ruminations following trauma might share similar content with the reported deployment worries. Hence, deployment worries might be an indication of the PTG process. While leaders should seek to reduce deployment worries, they might also help soldiers process those worries in light of their trauma. Similarly, Tedeschi and McNally suggest leaders should promote self-disclosure, allowing soldiers to “receive emotional support, develop a coherent trauma narrative, and find models for healthy trauma response and posttraumatic growth.”⁷⁹

In addition to deployment worries, barriers to support positively related to PTG. Again, it seems incompatible for an increase in difficulty obtaining support being related to greater PTG. When faced with barriers to formal support, individuals may turn to informal sources of support, including friends, co-workers, and family, which in turn improves PTG. While leaders have a

duty to remove all barriers to formal support, leaders should also not discount the importance of informal support systems.

In support of the hypotheses, a number of support variables predicted PTG, including the positive benefits of deployment, transactional leadership and social support. In this study, the positive benefits of deployments included pride, family closeness, civilian job experience, money, home life appreciation, bonds with unit, better cope with stress, perspective on problems, healthcare/retirement benefits, and feeling like a better soldier. This list shares many common elements with the list predicting ARNG recruitment and reenlistment, including pay, benefits, and pride in service.⁸⁰ These benefits may extend beyond reenlistment to PTG. According to Larner and Blow, “people will have a more positive outcome if they are able to somehow incorporate their traumatic experience into their existing global meaning system.”⁸¹ In other words, victims of trauma stand to benefit from making sense out of the traumatic event. Although soldiers might not be able to control the traumatic events in warfare, they have some control over the personal meaning ascribed to those events. Consequently, the various benefits of deployment might help ascribe meaning to the traumatic events experienced. Given the demonstrated importance of deployment benefits to PTG, leaders should continue to promote unit pride and camaraderie, while also recognizing the importance of monetary benefits in potential meaning-making efforts.

In addition to deployment benefits, transactional leadership also significantly predicted PTG. This result is puzzling considering, in a study by Lowe, transformational leadership proved more effective in inspiring others toward organizational effectiveness across multiple studies.⁸² Additionally, transformational leadership seeks to inspire followers, which would seem beneficial to the PTG meaning-making process. In a study on military unit performance,

Bass et al. noted both forms of leadership positively related to organizational effectiveness.⁸³ In their attempt to explain why both forms of leadership were equally effective, Bass et al. reasoned the “structure and clarity of expectations that comes with transactional contingent reward leadership may have been even more essential because of turnover rates in these platoons.”⁸⁴ While not necessarily inspiring soldiers to creativity or heightened motivation, leadership based on reward and punishment may provide predictability and stability during a chaotic deployment. This stability and guidance likely helps soldiers process the unpredictable traumatic events they experience in combat, thereby fostering PTG among unit members. Consequently, senior leaders should highlight the importance of officer and non-commissioned officer leadership during deployment as a means to foster PTG. In addition, by understanding the importance of the positive benefits of deployment, along with the key variable of social support, leaders can foster unit environments to promote PTG.

While deployment benefits and transactional leadership predict PTG, both formal and informal social support also played a vital role in promoting PTG among ARNG soldiers. In this study, examples of informal social supports involved fellow soldiers, family members, deployment leaders, close friends, and people who share hobbies or church activities. Formal support systems included ARNG programs, medical personnel, veteran’s organizations and the Veterans Administration. Findings suggest all these support systems predicted PTG. Prati and Pietrantoni suggest, “Social support may be a precursor of personal growth by influencing coping behavior and fostering successful adaptation to life crises.”⁸⁵ These social supports likely help individuals process traumatic experiences and assist in the meaning-making process. Since many ARNG soldiers may return home and resume civilian lives and occupations, they may be particularly vulnerable to feelings of isolation. In order to enhance PTG, ARNG leadership

should provide multiple avenues of social support to soldiers, from informal relationship building opportunities to more formal programs throughout the soldiers' deployment experience.



Appendix

Table 1

Bivariate Correlations between Variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Stressors																		
(1) Deploy Inconvenience	---	.56**	.43**	.41**	.47**	.07*	.18**	-.06*	-.06	.08**	.06*	.07*	-.06	.22**	-.06	.01	.36**	.11**
(2) Deploy Worries	---		.38**	.36**	.48**	.01**	.23**	.15**	-.06*	-.01	-.04	-.02	-.02	-.04	-.05	-.03	.38**	.14**
(3) Deploy Danger	---			.40**	.51**	.05	.23**	.19**	.05	-.02	-.02	-.01	-.02	-.02	-.01	.01	-.10**	.16**
(4) Deploy Unit Issues	---				.43**	.05	.18**	.20**	-.07*	-.17**	-.16**	-.15**	-.16**	-.15**	-.11**	-.01**	.29**	.05
(5) Deploy Homecoming	---					.07*	.40**	.26**	-.12**	-.11**	-.11**	-.10**	-.09**	-.10**	-.20**	-.10**	.64**	.11
(6) Irregular Warfare	---						-.02	-.04	-.03	.01	.02	.01	.02	.01	-.01	-.05	.12**	.03
(7) Barriers to Support	---							.35**	-.10**	-.03	-.05	-.02	-.01	-.01	-.05	.03	.47**	.12**
(8) Laissez-Faire Leadership	---								-.13**	-.37**	-.37**	-.36**	-.37**	-.34**	-.13**	-.04	.28**	.24
Supports																		
(9) Positive Benefits of Deployment	---									-.24**	.22**	.21**	.21**	.21**	.39**	.34**	-.19**	.37**
(10) Transformational Leadership--Idealized Behavior	---										-.88**	.84**	.84**	.85**	.28**	.21**	-.12**	.15**
(11) Transformational Leadership--Motivation	---											-.83**	.85**	.86**	.27**	.16**	-.13**	.14**
(12) Transformational Leadership--Intellectual Stimulation	---												-.85**	.86**	.30**	.22**	-.19**	.14**
(13) Transformational Leadership--Individual Consideration	---													-.82**	.29**	.17**	-.10**	.13**
(14) Transactional Leadership	---														.28**	.21**	-.12**	.17**
(15) Social Support Informal	---															.53**	-.20**	.27**
(16) Social Support Formal	---																-.13**	.25**
PTSD																		
(17) PTSD Symptoms	---																-.07**	
PTG																		
(18) Posttraumatic Growth	---																	---

* p < .05, ** p < .01

Table 2
Regression of Posttraumatic Growth

IVs	Unstandardized		std error	Standardized		
	b's	of b		b's	t-value	
(intercept)						
Stressors						
Deploy Inconvenience	-.05	.25		-.01	-.18	
Deploy Worries	1.00	.32		.13	3.13**	
Deploy Danger	.12	.22		.02	.54	
Deploy Unit Issues	-.17	.44		-.02	-.39	
Deploy Homecoming	.21	.22		.05	.92	
Irregular Warfare	.32	.35		.03	.92	
Barriers to Support	1.04	.49		.08	2.11*	
Leadership Laissez-Faire	.39	.24		.06	1.64	
Supports						
Positive Benefits	1.82	.20		.32	9.21***	
Leadership Idealized Behavior	-.33	.50		-.05	-.67	
Leadership Motivation	.05	.47		.01	.10	
Leadership Intellectual Stimulation	-.25	.49		-.04	-.51	
Leadership Individual Consideration	-.28	.44		-.04	-.63	
Leadership Contingent Reward	1.11	.48		.17	2.34*	
Social Support Informal	1.01	.39		.10	2.60**	
Social Support Formal	.27	.13		.08	2.15*	
PTSD						
PTSD Symptoms	.03	.09		.03	.78	

R = .468, adj R² = .203 (i.e., explained variance = 20.3%)

* p < .05, ** p < .01, *** p < .001

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